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FOREIGN TECHNOLOGY DIVISION



CHINESE PEOPLE'S LIBERATION ARMY MISSILE UNIT
(Selected Articles)



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CHINESE PEOPLE'S LIBERATION ARMY MISSILE UNIT
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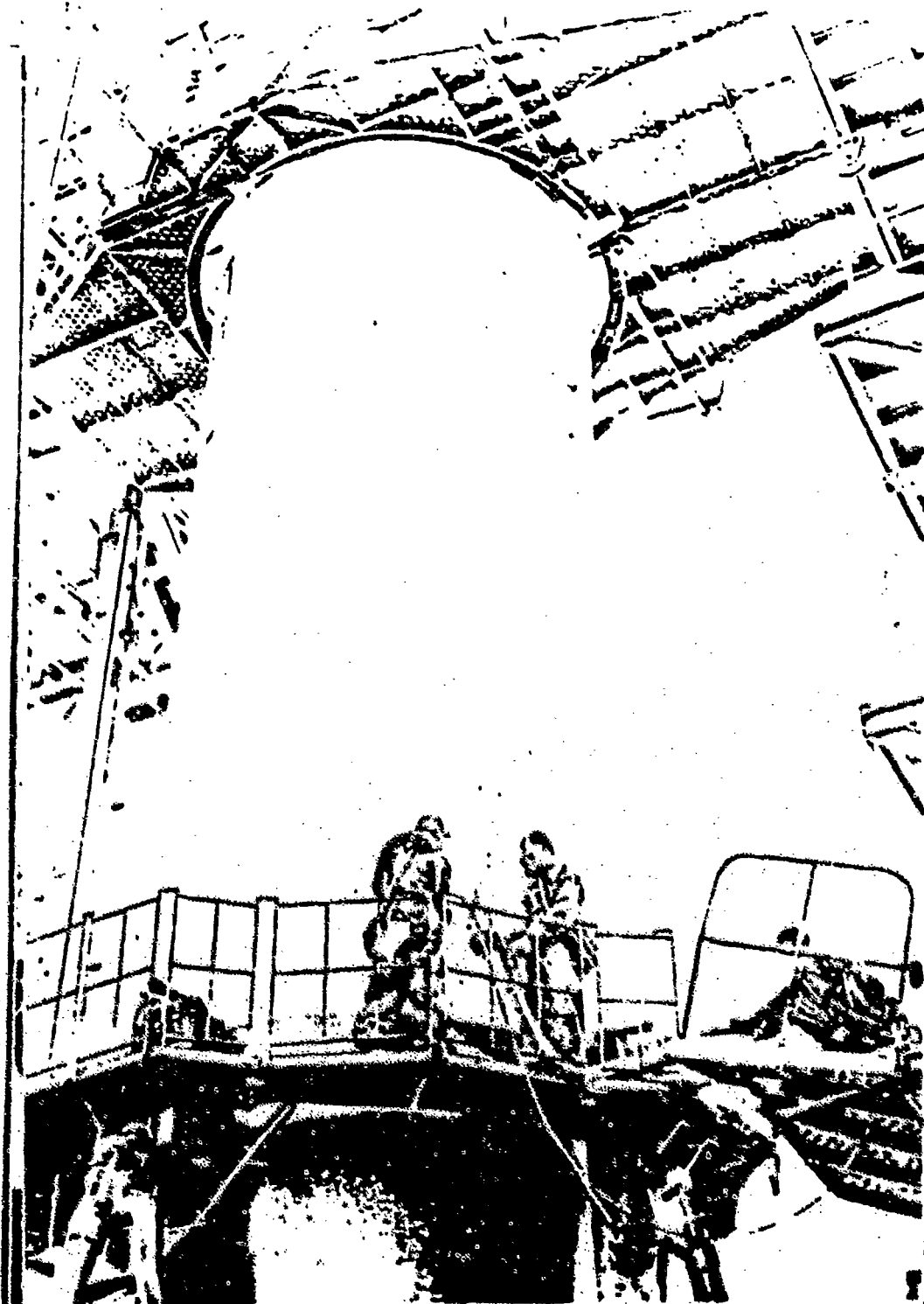
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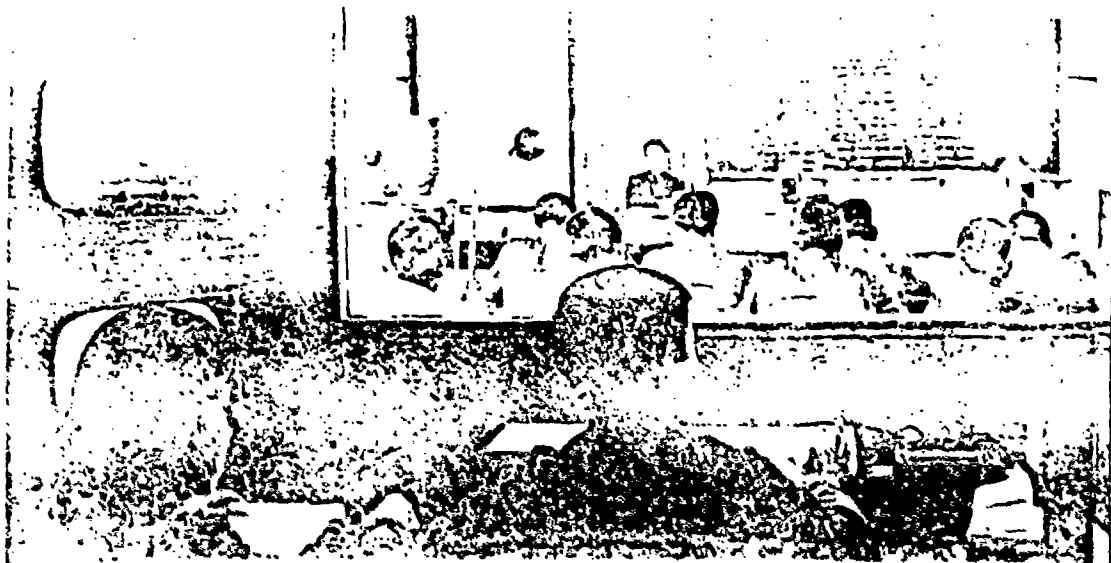
Adding fuel to the payload rocket.

A VISIT TO THE INSTITUTE OF GUIDED MISSILE TECHNOLOGY

Zhang Juzeng, Li Weiliang and Lo Zuenrong.

[Translator's note: It was necessary to extrapolate some words which were cut off in the text.] The Institute of Guided Missile Technology was established and developed as the guided missile troop grew. There are numerous specialized courses offered at the Institute to train personnel to possess an industrial college level of knowledge and become familiar with the weaponry of the guided missile troop as well as being able to correctly use and maintain and manage. In order to produce more results and more personnel, the Institute has tried everything to raise the quality of teaching. The leadership at the Institute often visits classes to help solve problems in teaching. The instructors work hard, teach enthusiastically and patiently. The staff and maintenance crew always keep the teaching duties in mind, thus, guarantee their fulfillment. Since its inception, this Institute has trained and assigned a large number of technical personnel and lower level commanding officers to the guided missile troop.

(Translations, China, Chinese language)



A visit to the Institute of Guided Missile Technology



HONO. WEISMAN.



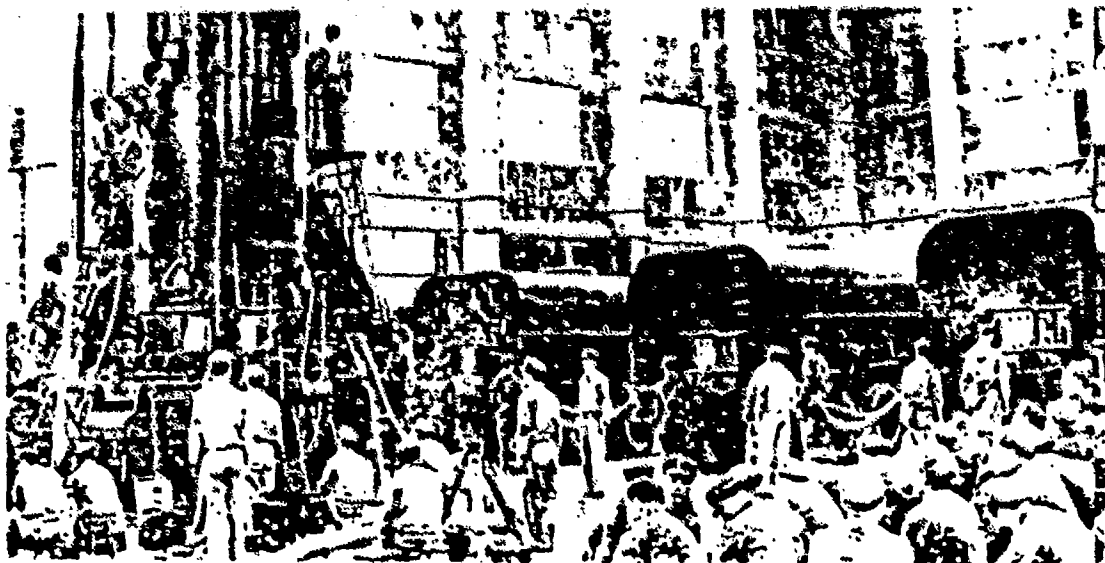
RECEIVING
INFORMATION.



WORKING ON
RESEARCH.



RESEARCH
WORK.



Key: (1) Teaching enthusiastically to help the cadets solve problems; (2) Instructors assemble the computer to provide more teaching aids; (3) Under the guidance of the instructor (right), the cadet conducts chemical analysis of the guided missile propellant; (4) The instructor uses a sand box to explain to the cadets the deployment problems of guided missiles.



Using closed-circuit television to learn foreign language.

In the great teaching hall, the instructor is explaining the structure and performance of a guided missile.



Practicing while listening to the instructor's explanation helps the cadets to better understand.



TAKE TRAINING SERIOUSLY

Yuen Zuenzhang, Xu Jiekung and Wu Shouzhuan.

"Good style produces fighting power": this is an experience grown out of blood in combat. If a troop at peace time has a style of tough training, total mobility, high readiness, come rain or shine, and utter perseverance, it can then take all the punishments and tests in real combat. A certain air force surface-to-air guided missile battalion is undergoing vigorous training to obtain this excellent combat style.

The key to a troop's strict style is its officers. The fact that battalion commander Wang Tingshen had conducted troop evaluations on rainy days exemplified this. In one afternoon, the sea breeze mixed with a light rain battered the guided missile position. Commander Wang took company commanders and staffers with him to conduct final evaluations of the new recruits' basic training. Upon orders, the entire position came alive. Soldiers started the cranes, removed the covers, pushed the rockets, made connection to reinforce their actions were fast, agile and coordinated, and according to the required

time limit, a guided missile was installed on the carrier. The new soldiers thought they were going to hear praises from the battalion commander, yet he announced: this guided missile is not capable of executing combat duties. He pointed to a bolt next to the main wing and said: "This reinforcement bolt appears to be fastened tight, in fact it is missing a few turns." Then, he used a wrench to tighten two turns, and said solemnly and patiently: "During its flight, the guided missile is under great influences of air flow. If the bolt is slightly loose, there is danger of the guided missile being out of control, then we will not be able to accomplish the important duties assigned to us by the party and the people!" These words gave everybody a good education. The soldiers whole heartedly admired the battalion commander's no nonsense style. although their faces were covered all over with sweat and rain, everybody felt that if the technique requirement for combat was to be obtained, there was more serious training to be done.

Techniques are obtained from training and so is style. One time the guided missile battalion was supposed to cross a strait and carry out combat preparation duties. When the troops arrived at the shore, a heavy downpour suddenly started and fog moved in from the sea. Facing the strong wind and big waves, the soldiers' morale was high and so were their combat spirits. Trucks towing and hands pulling, the heavy weapons were loaded into the ship and all crossed the strait safely. Upon landing, they encountered muddy roads. Vehicles were caught in the mud, and it appeared that the guided missiles were unable to be moved into preset position. Undaunted, the rank and file pulled together and passed through a dangerous section of road by pushing

the trucks which, in turn, towed the guided missiles. They were able to reach the position ahead of schedule and completed the combat preparation.



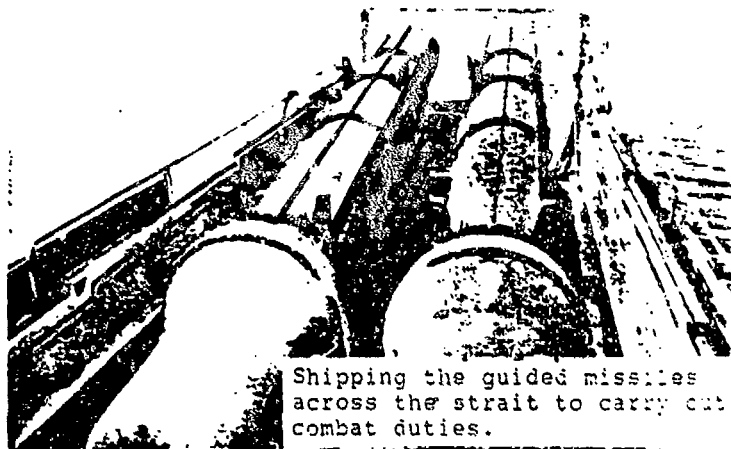
Battalion commander Wang Tingshen (right) conducts field training and demands high performance.



Soldiers fight against seconds and minutes to test seriously and guarantee that the guided missile will be ready for launch immediately.



The driver of the tow truck
boldly, yet carefully,
maneuvers to pass through the
mud.



Shipping the guided missiles
across the strait to carry out
combat duties.



The operator skillfully and
quickly completes the combat
preparation on time.



With the efforts of the entire
battalion, a guided missile
flies accurately to and the
target.

SHARP SWORDS IN THE SKY

Li Baoguo, Huang Hongjian, Xie Quanming, Quan Yence and Hu Baoyu.

In the days of all-out efforts by our military to rapidly revolutionize and modernize its buildup, a certain surface-to-air guided missile troop has put forward a new pace. In the past decade or so, this troop, which inherited and enhanced our military forces' glorious tradition of struggling against hardship and fighting gallantly, has, in numerous occasions, dealt the incoming enemy with devastating punishment in air defense combat throughout its tour around the mother land, and has set excellent combat records for the people. Both Chairman Mao and Premier Zhou had cordially met with the entire "Hero Battalion" of this troop. After the crackdown of the "Gang of Four", the troop, under the leadership of the party central led by Chairman Hua, fought against seconds and minutes to enhance its combat preparation training and its buildup toward revolutionization and modernization. Whether it was sizzling hot summer or bitter cold winter, they went on with their training seriously to make the best performance even better and master the skills of modern warfare. Not too long ago, in

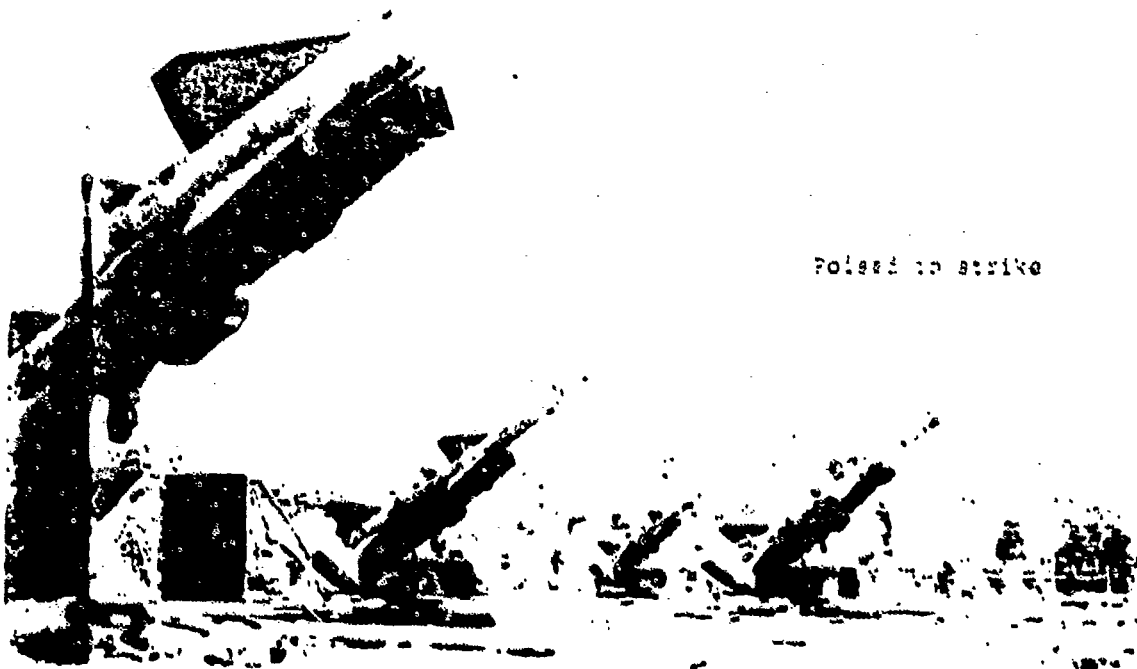
a real missile target practice, the rank and file coordinated well and followed commands to launch the guided missiles like sharp swords piercing into the sky with lightning speed and then accurately hitting the targets. The heroic surface-to-air guided missile troop is on alert day and night to guard the air space of the motherland.



High fighting spirit



Accurate guidance



Ready to strike

THE "HERO TROOP" NOURISHED BY THE PARTY

Tang Xiende and Wu Shenhuei.

A certain air force surface-to-air guided missile troop had shot down several enemy planes in the defense of the motherland's air space. It was given the title of "Hero Troop" by the Ministry of National Defense.

The average age of the members of this troop's party committee is only thirty. This is a young leadership group. The party committee and its branches at each company put heavy emphasis on the political thoughts and concentrate on training new personnel who are both politically loyal and professionally competent. They review the thought situation of the troop, then match it with an education of revolutionary view on life to help the young soldiers establish a thought of bearing arms for socialism and fighting for the people. At the beginning, some of the young intellectuals from the cities who join the troop want to serve in positions that suit their liking. After some studying, they are able to understand the glorious tradition of the people's army and the honor of this troop, and then they can face their

assignments with the right attitude and start disciplining themselves. In the past, the new soldiers would require three-month training to be able to assemble a single guided missile. This year, only after a one-month crack training, the new soldiers are able to carry out combat duties.

The party committee and its branches at each company of the "Hero Troop" are more concerned with science education. The techniques of the guided missile troop are complex, requiring its rank and file to have a higher scientific knowledge level. Each company holds separate training classes on such basic theories as electro-technology, radio, electric pulse, interpretation of mechanical drawings, etc., and encourages party members to take the lead to study together. The rank and file start from learning the basic theories and doing the single soldier maneuvers to master the training that centers around continuously preparing guided missiles, continuously maneuvering and loading guided missiles and continuously relocating fire power. The training is repeatedly conducted and maneuvers coordinated to effectively increase the troop's fighting power.



The members of the party committee of the "Hero Troop" strictly follow the on-duty system and constantly monitor the changes in air intelligence.



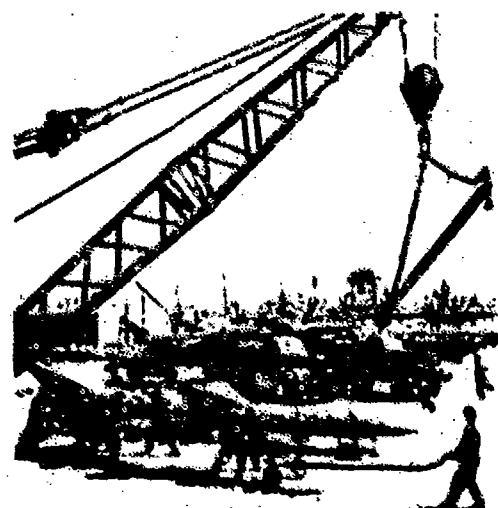
Deputy Secretary of the party committee and also the troop's commanding officer Yen Shezhong cannot only command, but also operate. The soldiers call him an all-around leader, politically and professionally.



Before carrying out their duty, party members take the lead to carefully conduct tests.



A new soldier of the technical assurance company is assembling a guided missile.



In the continuously preparing guided missile training, the officers and soldiers work together to conduct the operation stably, correctly and quickly.



The guided missiles of the "Hero Troop" are at ready.



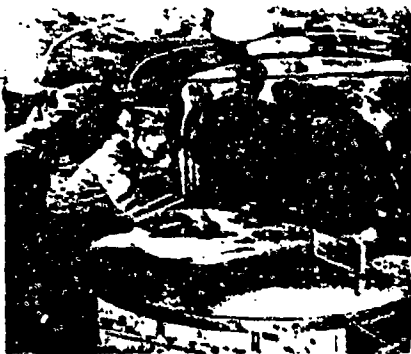
Fast loading



Careful testing



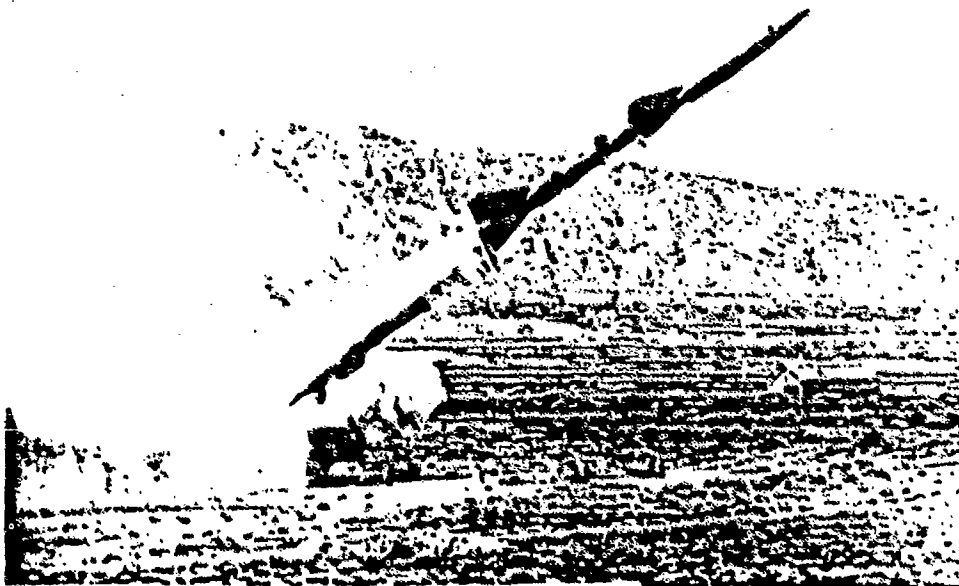
Adding fuel



Assigning duties



Tracking target



Piercing into the sky

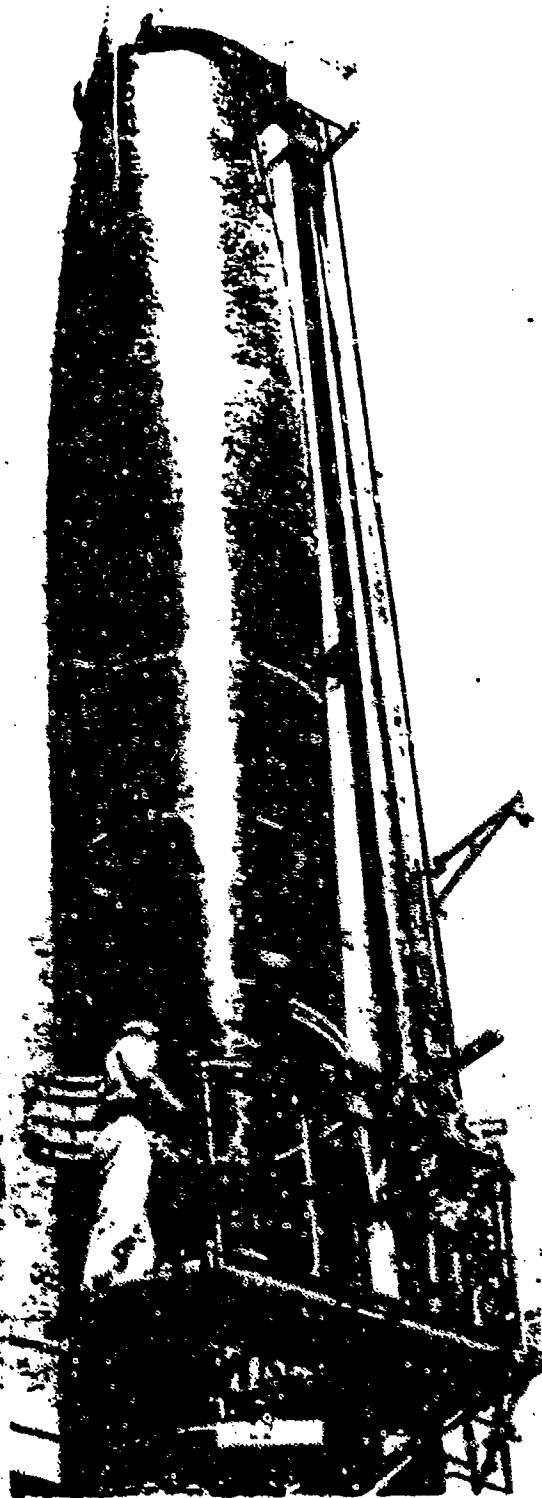
GREAT WILLS SOARING IN THE SKY

Zhang Juzeng and Hu Baoyu.

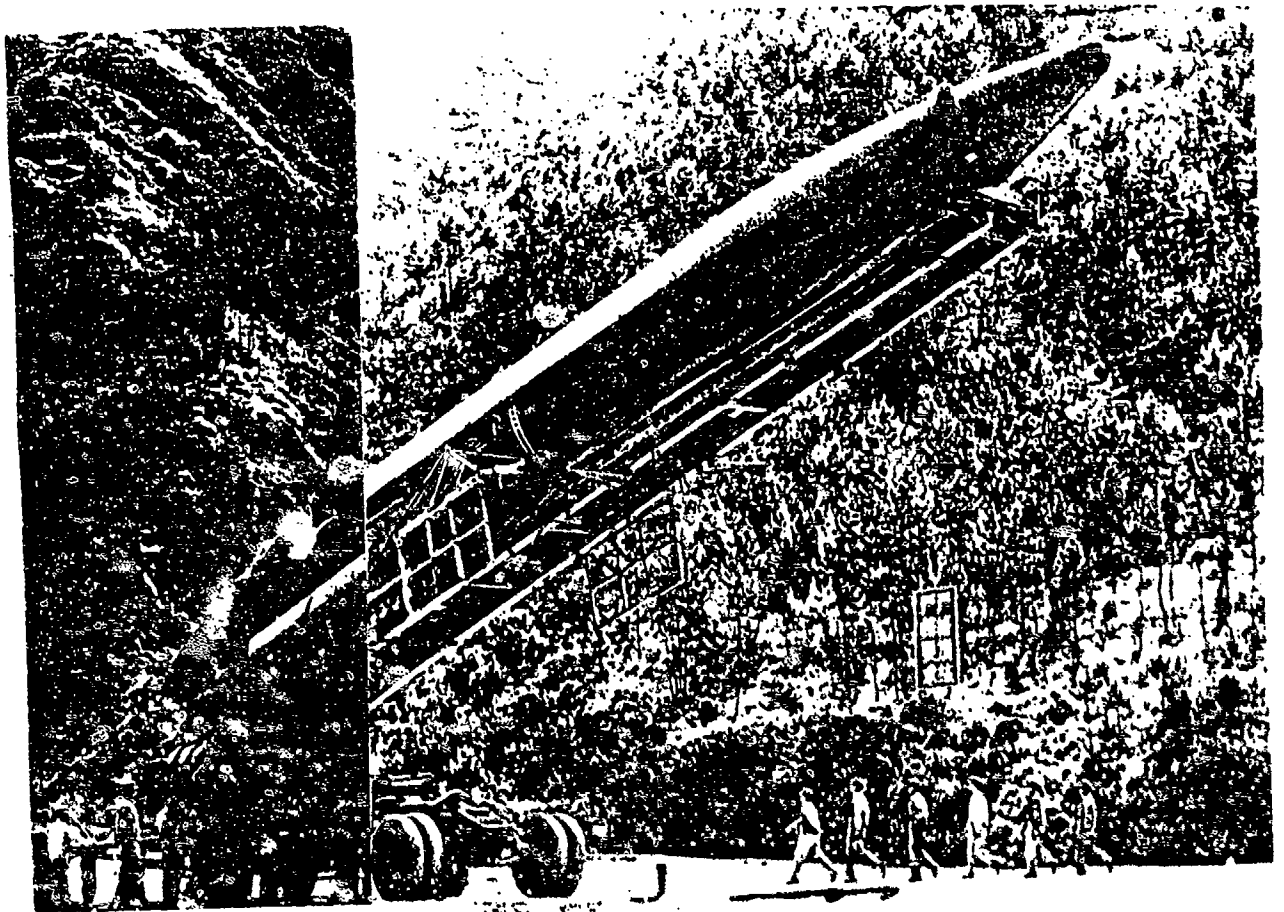
One missile after another pointing to the sky,
One equipment vehicle after another speeding like arrows,
Revolutionary soldiers filled with strong passion,
The training is all for anti-aggression.

One row after another the fluorescent indicator lights blinking,
One piece of equipment after another operating normally,
Revolutionary soldiers on high alert,
Confidence in certain victory fills the hearts.

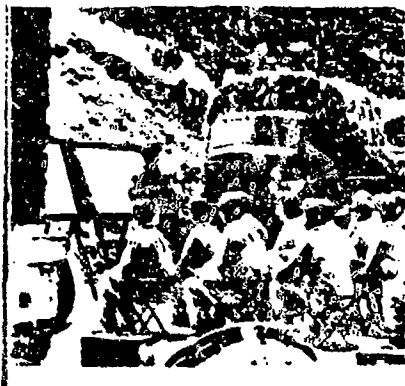
One order after another tightening the heart,
One soldier after another shouldering tough duty,
Revolutionary soldiers at ready,
Chairman Hua leads us forward victoriously.



Operating above
the ground.



Intense concentration



Politically loyal and professionally competent



Carefully operate



Officers present



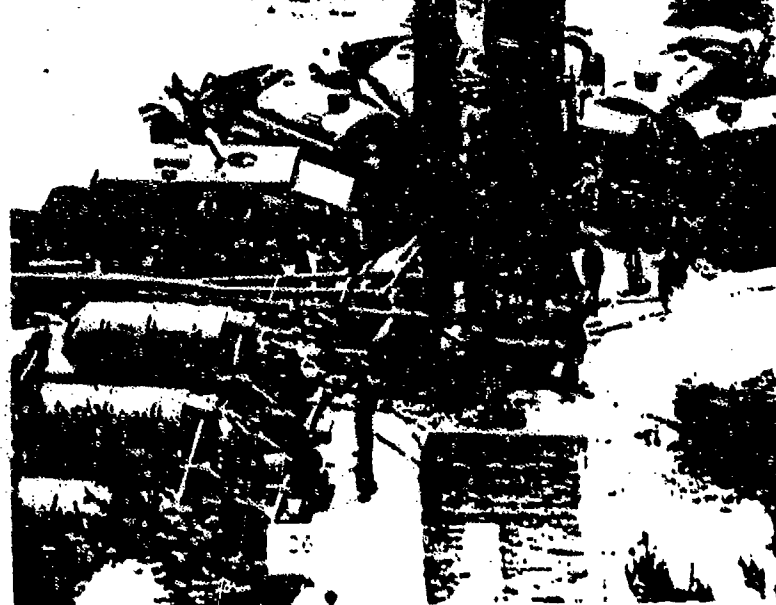
ense and fast



Accurately control



Fighting for seconds and minutes



IRON FOREST IN THE SNOW PLAIN

Photographed by Liu Xueshuan and Jia Mingzu.

Poem by Li Kebai.

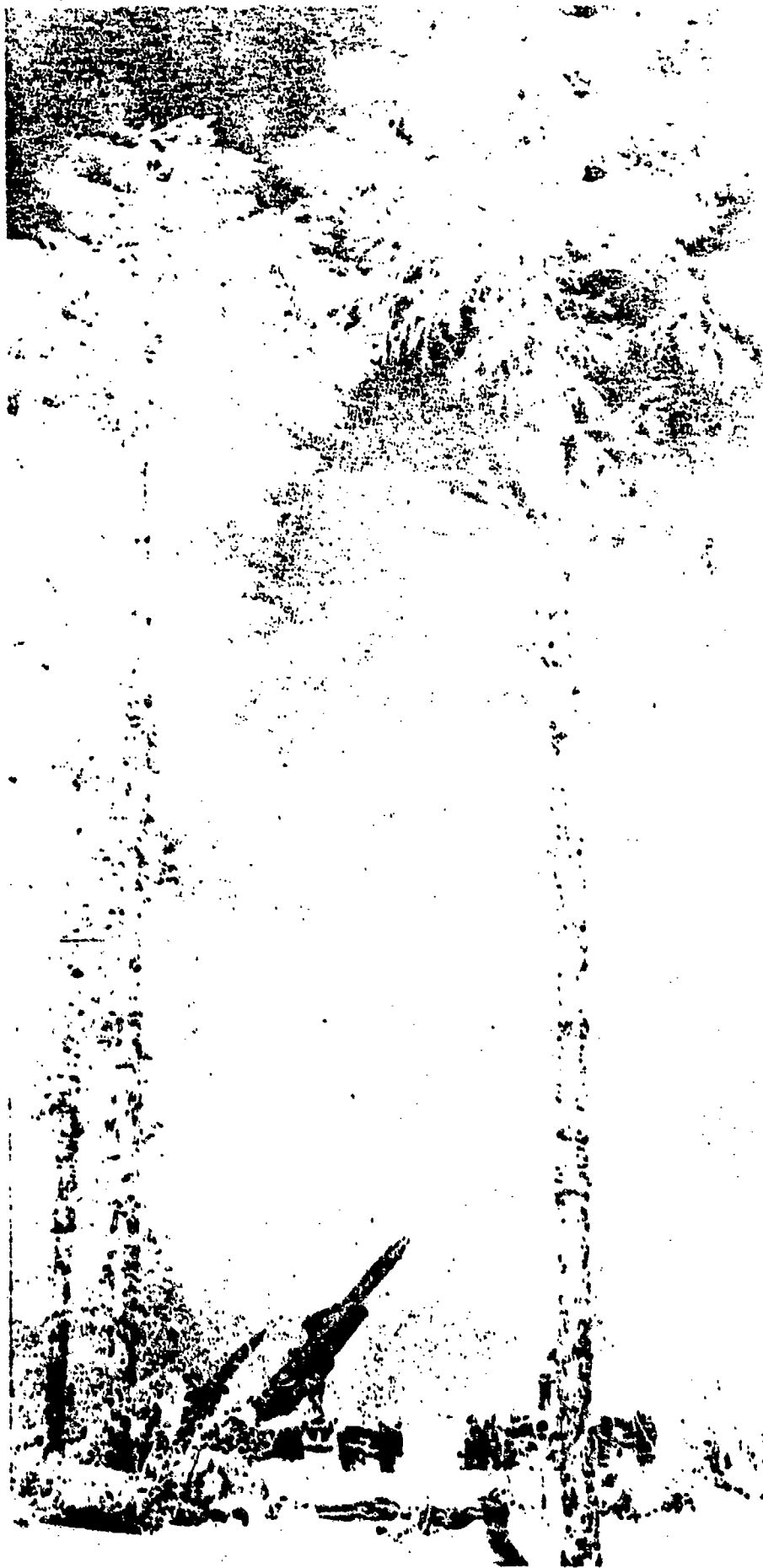
As the forest sea and snow plain in the northern frontier
covered with silver flakes,
Soldiers more alert to guard the blue sky of the motherland,
Line after line of footprints on the snow ground,
They are the iron oath against hegemony!

Train the soldiers, despite frozen ground and cold sky,
For the heart of the soldier is filled with burning flame,
Rolling heat waves pushing back the Siberian cold front,
One missile after another is just like swallows signaling the
spring!

Prepare for war, despite the high mountain and far river,
Rapidly redeploy to tighten the chord of preparation,

We will shoot wherever the enemy plane comes,
Until reaching the shore of the milky way afar!

- Alas, a new forest is added to the snow plain of the motherland,
This forest of iron stands tall like stone columns!
Alas, it is spring time in the harsh winter of the northern land,
The green uniform and red insignia on the cap are the colors to
welcome the spring! . . .



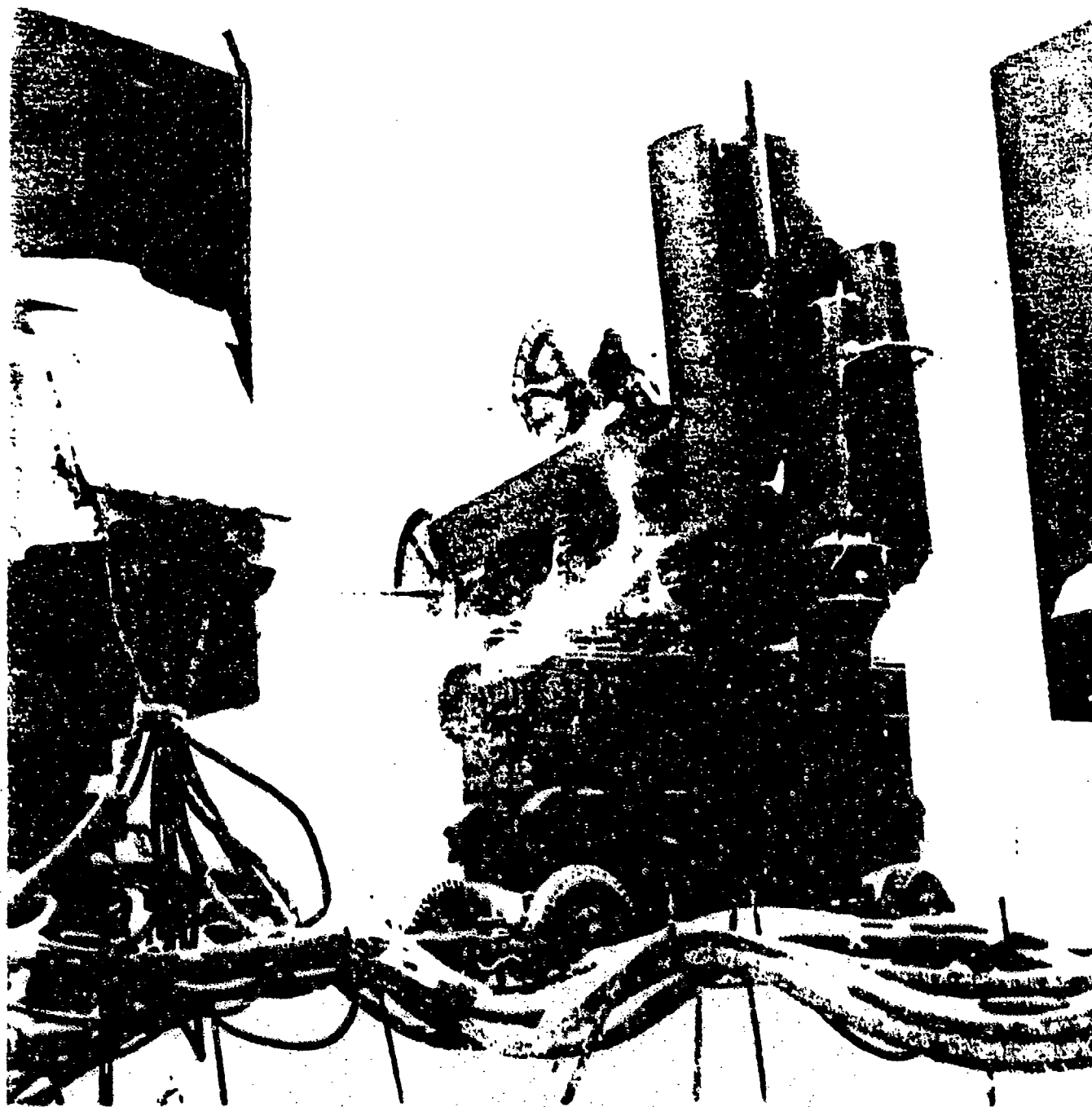
Training in the
bitter cold



Overall testing

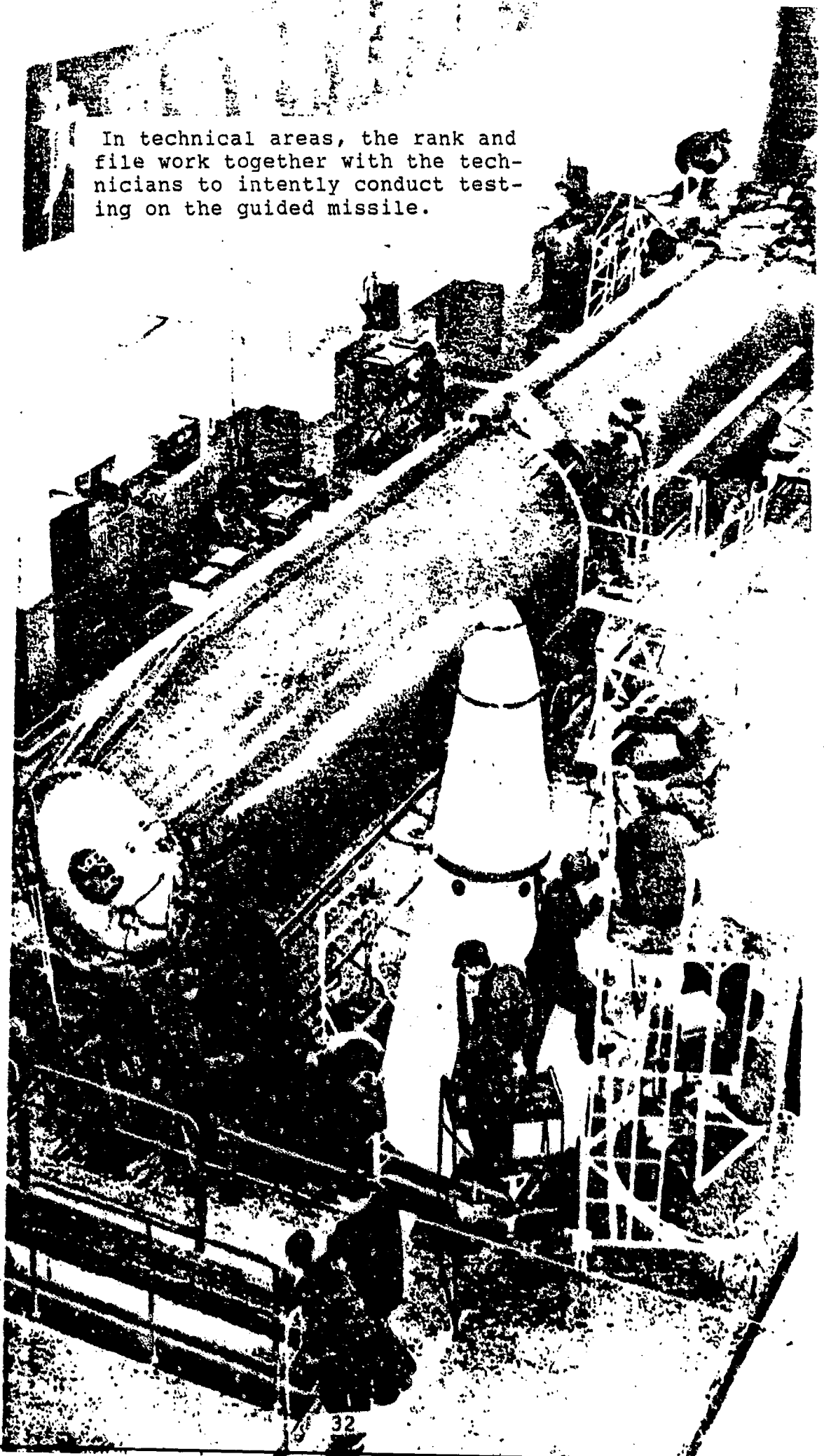


Setting anchor boards



Maintaining radar

In technical areas, the rank and file work together with the technicians to intently conduct testing on the guided missile.



THE GROWING GUIDED MISSILE TROOP



In the overall testing, the data on performance of the guided missile are examined carefully.



During the process of transporting, the operator follows the requirement of station-responsibility system and makes sure that his eyes see, ears hear and hands touch whatever is required of him in order to guarantee a foolproof launch.

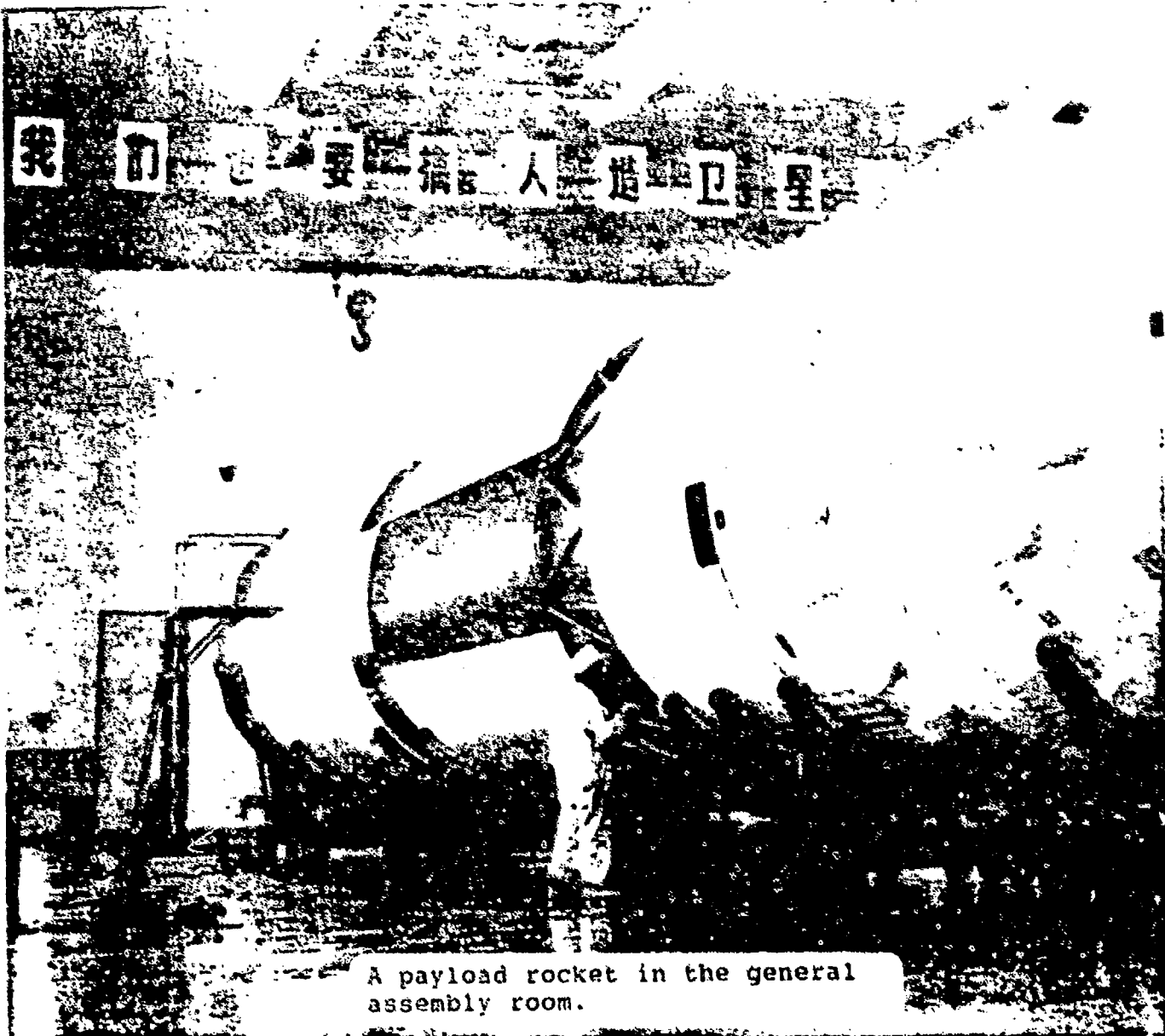
LARGE PAYLOAD ROCKET

Photographed by Liu Zibing

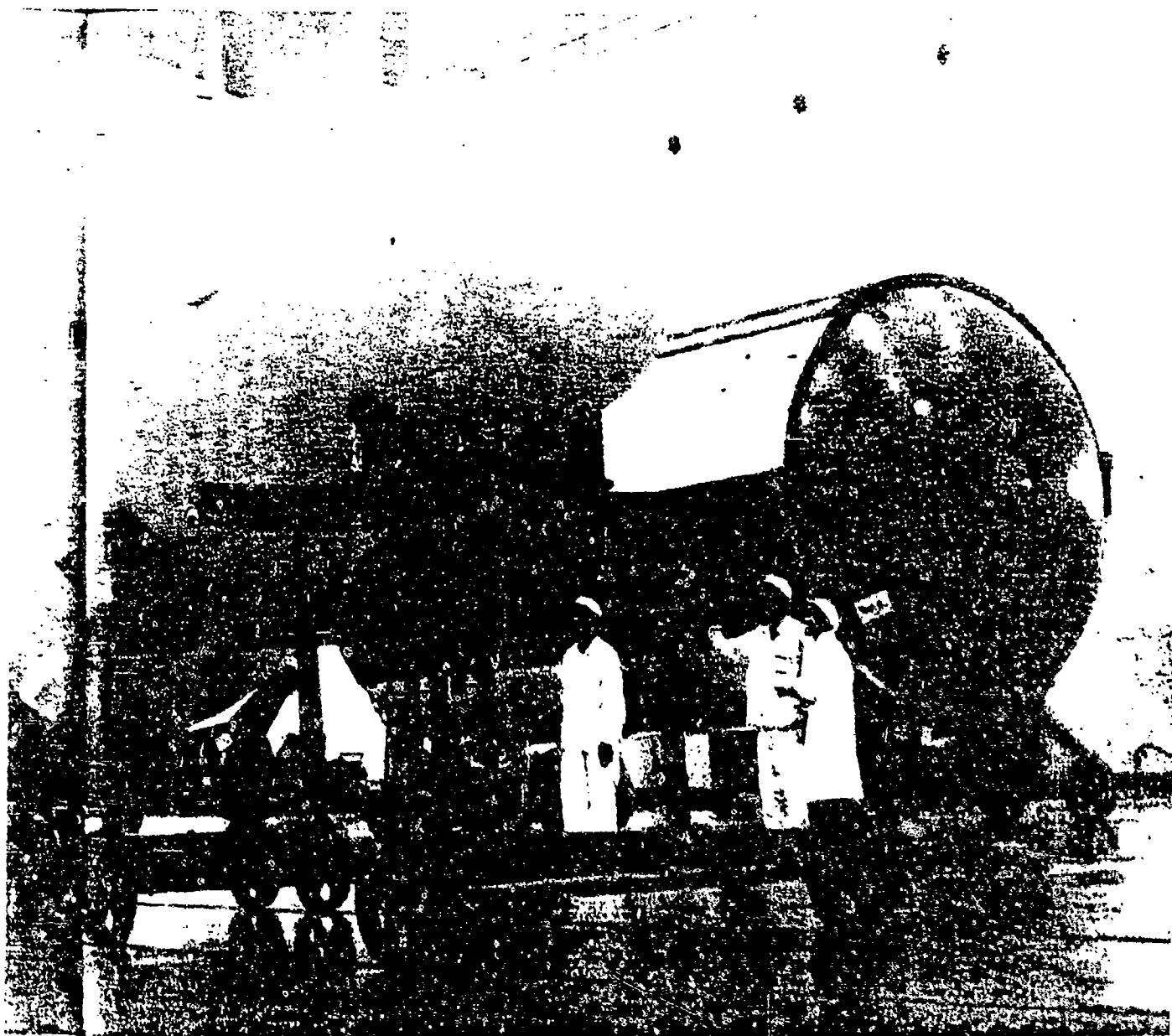
The space technology of our country is developing continuously, and many scientific and experimental satellites have been launched successively. To launch a satellite requires a large payload rocket to give the satellite a cosmic velocity of 7.9 kilometers per second.

What is being introduced here is a large liquid fuel payload rocket manufactured by our country. The engines installed on the first and second stages of the rocket can provide controlling forces. There is also a control system on the rocket to assure that the satellite accurately enters its orbit; the radio remote sensing system monitors the functions of each component during flight and transmits signals down to the earth; the radio tracking system measures the actual flight orbit and displays it. The outer shell of the rocket is made of a light weight, good technical performance aluminum alloy.

To produce a large payload rocket requires advanced scientific technologies and manufacturing techniques. Presently, the world's space technologies have entered the era of the space shuttle - a new stage toward a space station. In the new long march toward the realization of "Four Modernizations", the young space technology team of our country is working diligently to manufacture numerous new payload rockets in preparation for launching more satellites.



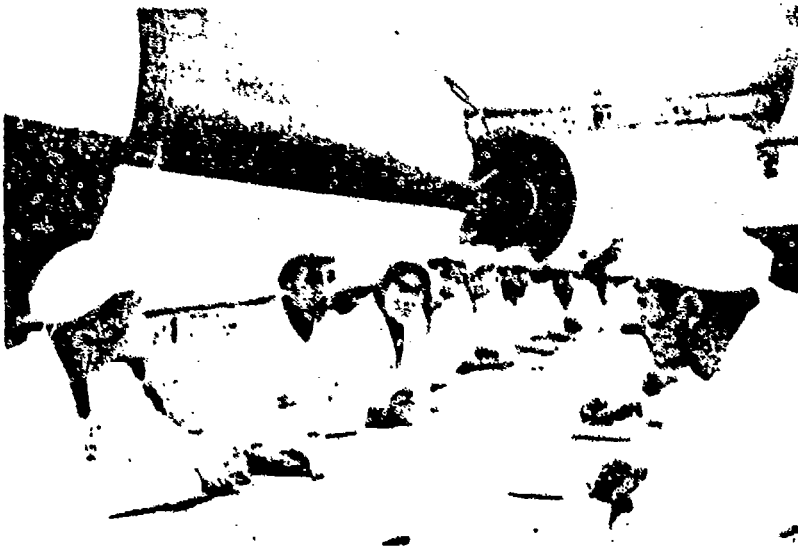
A payload rocket in the general assembly room.



A payload rocket in the general assembly room.



The calibration adjustment for the service mechanism of the first stage engine system.



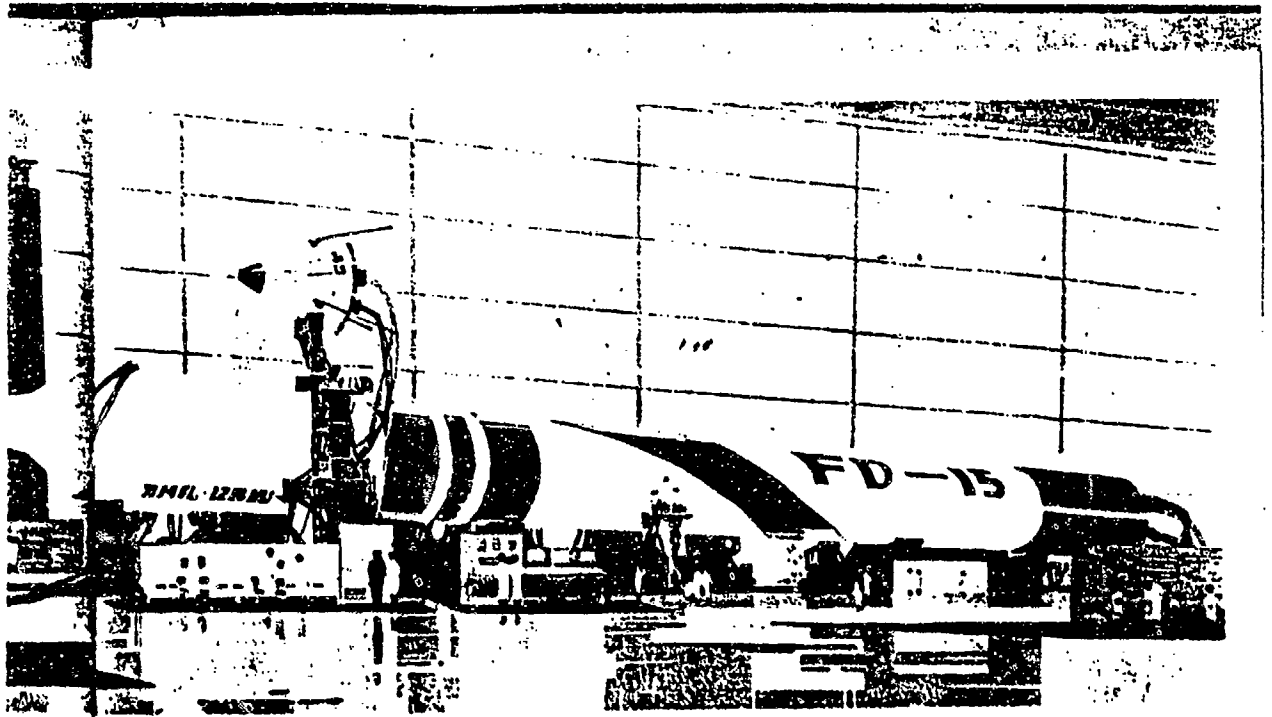
Rocket assembly engineering technicians hold a technical analysis meeting.

A MARCH OF TEN THOUSAND MILES

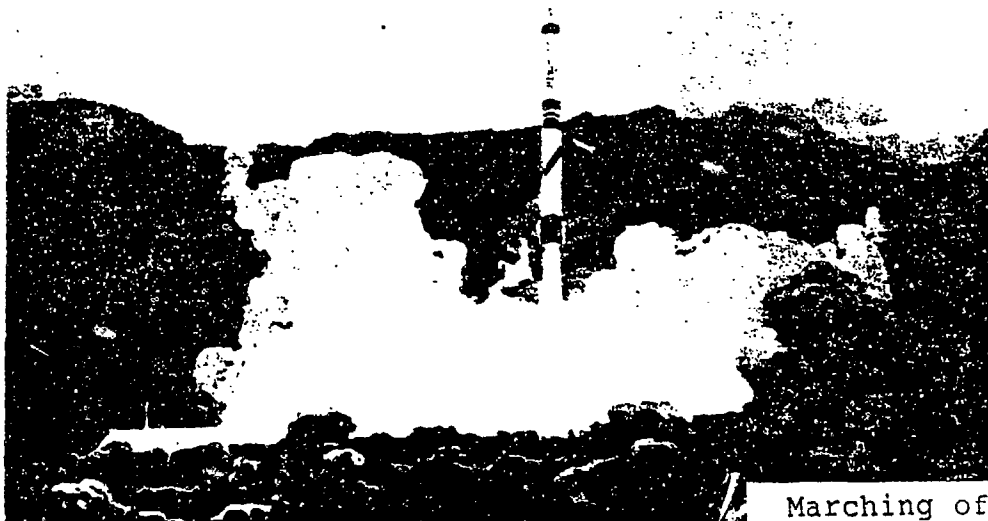
Lo Genxing, Zhang Aiming, Wang Hende, Shei Yianping, Zhong Yiliu,
Li Yajuan and Guan Weixing.



Testing



Testing



Marching off



Tracking



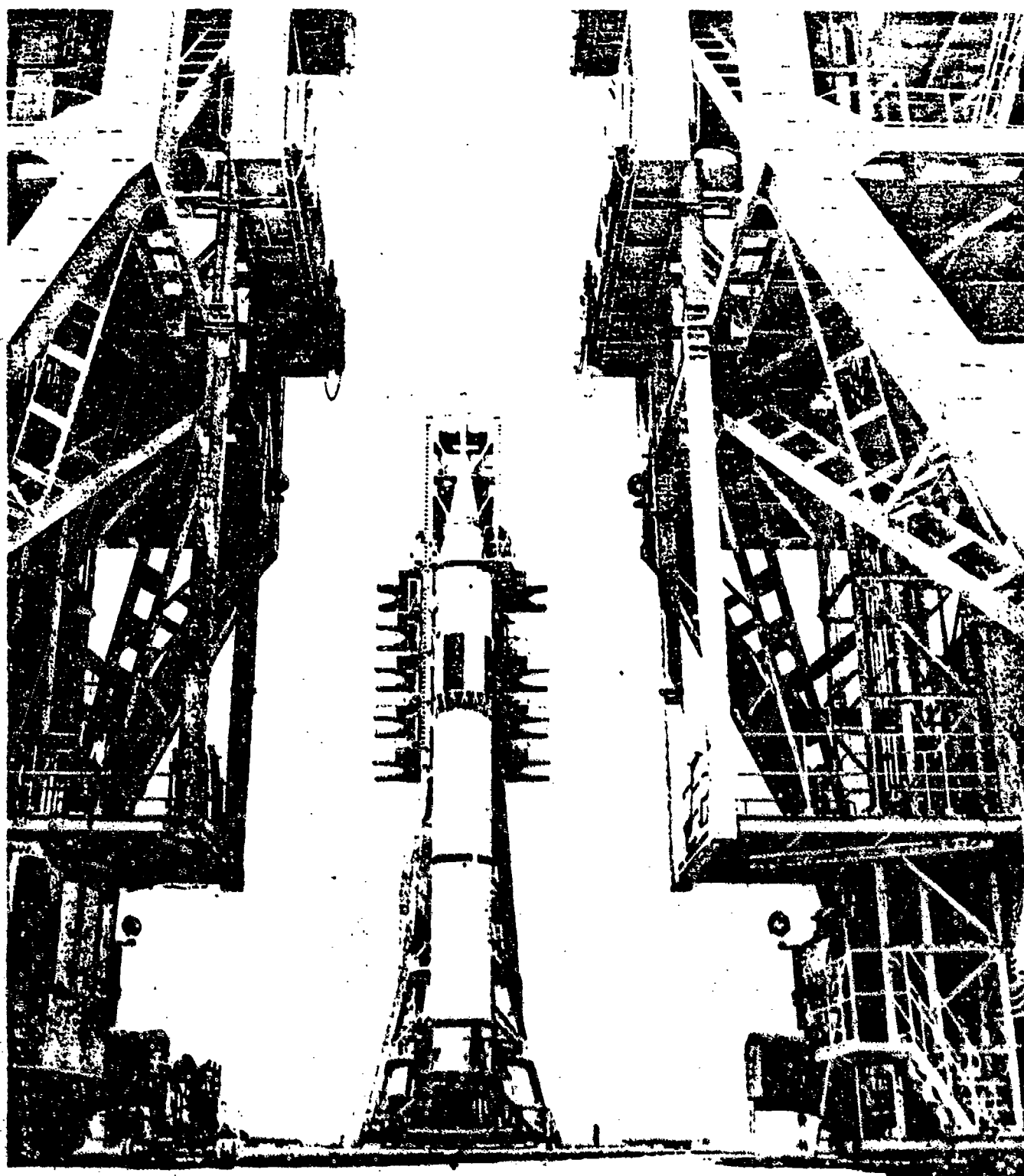
Victorious return



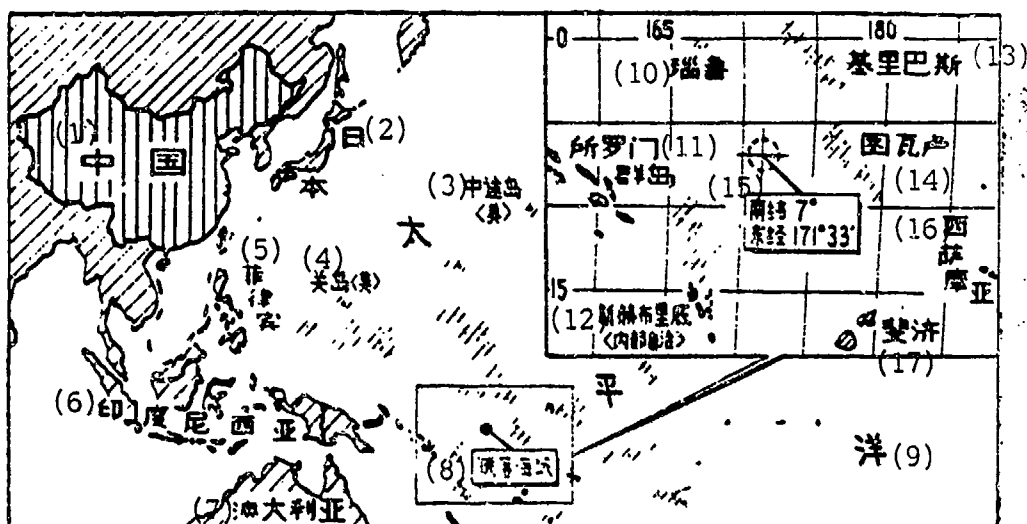
Abundant results

RAINBOW DANCING IN THE TEN THOUSAND MILE SKY

- Our Country's Successful Launch of a Payload Rocket to the South Pacific Ocean



The payload rocket with its launch preparation completed stands tall on the launching pad.



The Schematic Diagram of the Splashdown Region of the First Payload Rocket to the Preset Region in the South Pacific Ocean by Our Country.

Our country test-launched a payload rocket to a circular region with a radius of 70 nautical miles and center at south latitude 7 degree 0 minute and east longitude 171 degrees 33 minutes in the international water of the south Pacific Ocean.

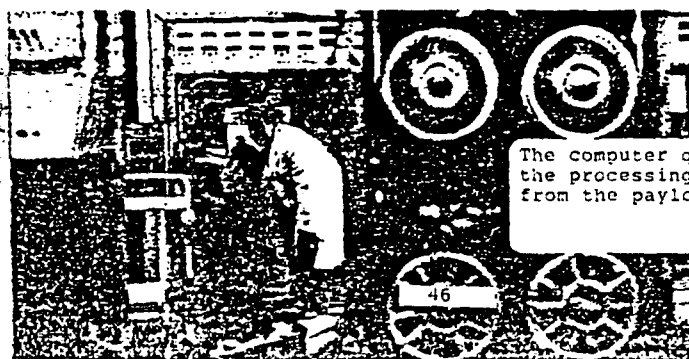
Key: (1) China; (2) Japan; (3) Midway (U.S.); (4) Guam (U.S.); (5) The Philippines; (6) Indonesia; (7) Australia; (8) splashdown region; (9) The Pacific Ocean; (10) Norlu; (11) The Solomons; (12) New Hepliti (autonomous); (13) Kilibus; (14) Tuvalu; (15) south latitude 7° , east longitude $171^{\circ}33'$; (16) West Samoa; (17) Fiji.



The commander calmly, decisively and accurately gives the launch orders.



The control and communications room promptly receives the tracking signals along the way and computes and displays on the screens.



The computer quickly completes the processing duty of flight data from the payload rocket.

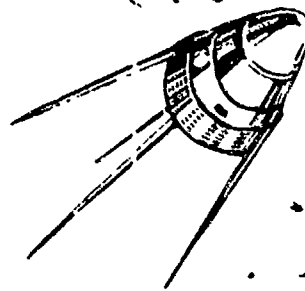
After ignition, the rocket takes
off with a thundering roar.



FLY TOWARD SPACE

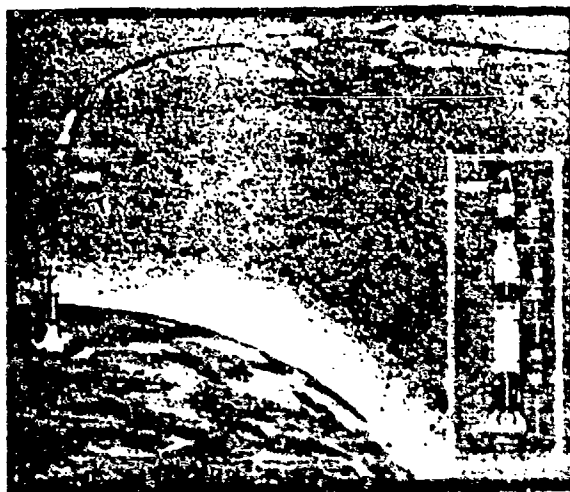


A large rocket carrying a satellite is about to fly toward space.



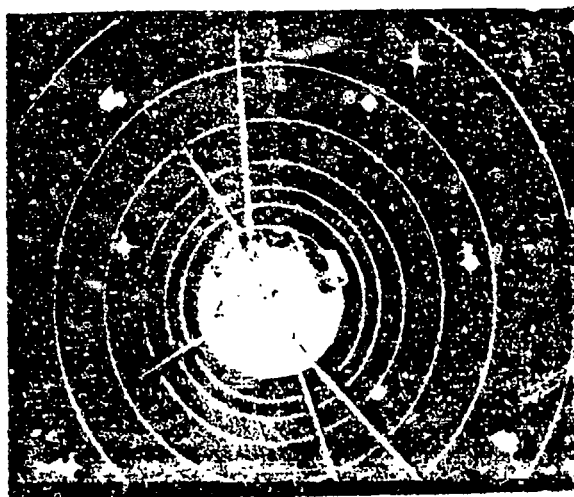
Measuring the clouds and observing the sky to provide an accurate weather forecast for satellite launching.

Photographed by Yang Zhongxin

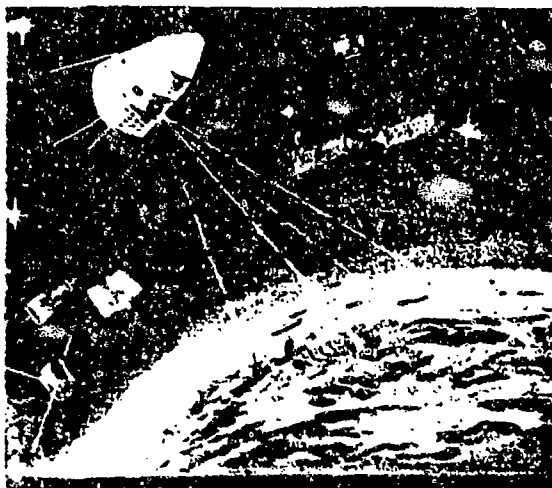


As the man-made satellite circles in its orbit around the earth, its inertial centrifugal force generated is exactly equal to the earth's gravitational force exerted on it; therefore, it neither flies away from the earth nor does it fall back to the ground. The velocity of the satellite in its near-earth circular orbit is 7.9 km/sec, and this is called the first cosmic velocity. If the velocity is smaller than this figure, the satellite will be pulled back to the ground by the gravitational force; if the velocity is greater than this figure, the satellite will then move in an elliptical orbit; if the velocity reaches 11.2 km/sec - the second cosmic velocity, the satellite will leave the earth and become a man-made planet circulating around the sun; and if the velocity reaches 16.7 km/sec - the third cosmic velocity, the satellite will leave the solar system and will enter the world of stationary stars.

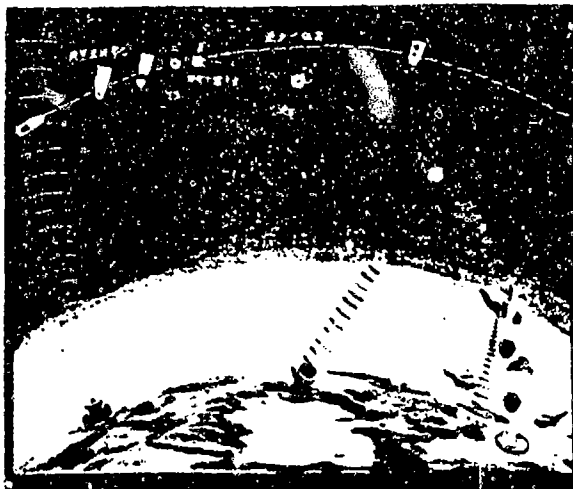
[Translator's Note: Chinese characters on the figure are illegible.]



Our country successfully launched the first scientific experiment satellite on April 24, 1970. The satellite weighed 173 kilograms, and it was heavier than any other satellite first launched by any country. The satellite carried a strong radio transmitter which broadcasted "The East is Red" musicals and transmitted scientific data to the ground. Our country has launched a total of eight satellites since then. Although currently many countries in the world have launched satellites, only the United States, Soviet Union, France, Japan and China are among the countries who can launch satellites using self-manufactured payload rockets.



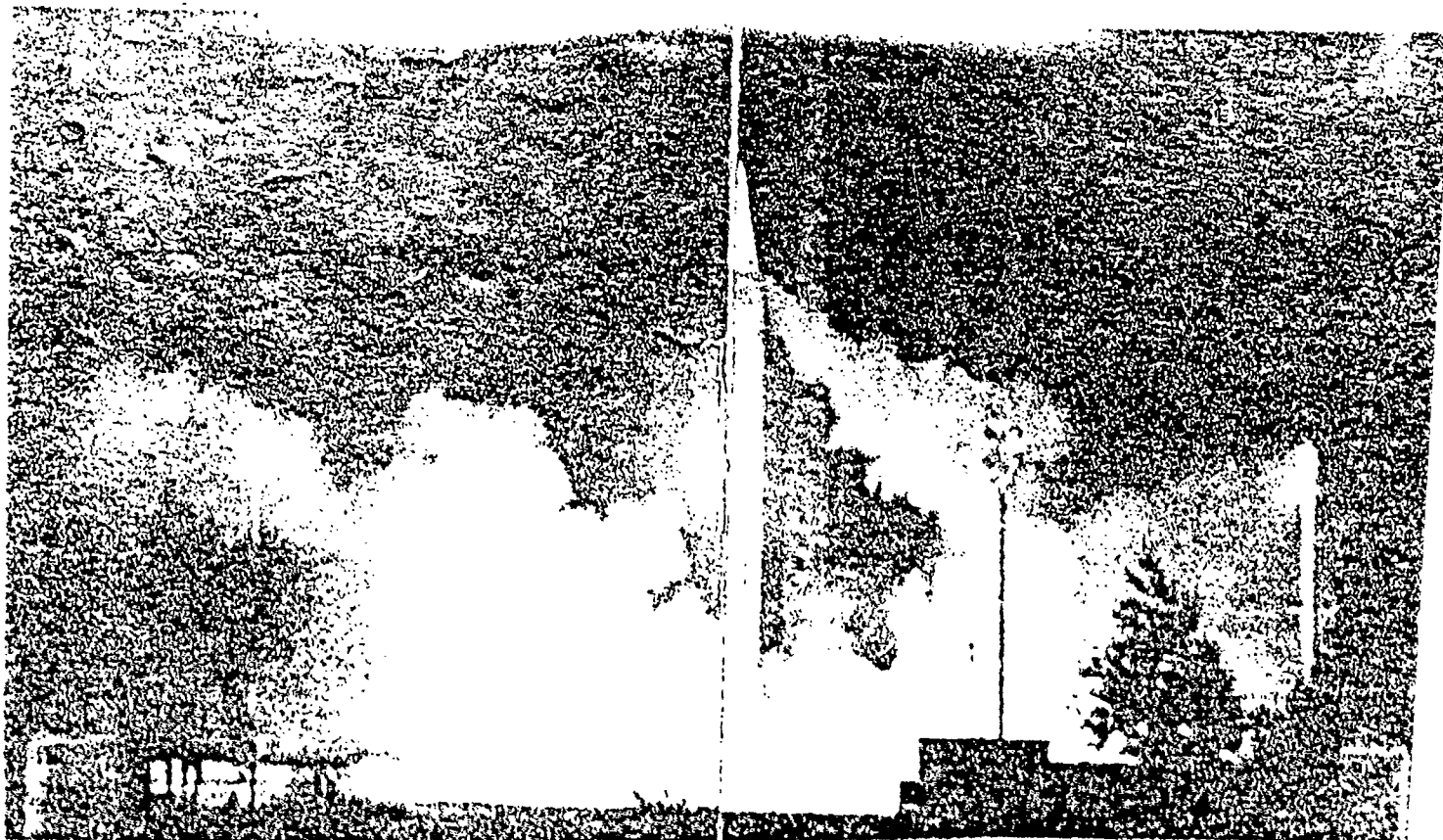
The satellite, being high in the sky, is under very little atmospheric interference. Through the various instruments and devices it carries, the satellite is capable of observing the universe above, monitoring the earth below and transmitting signals and data. Therefore, the satellite not only plays an important role in mankind's scientific researches, production and life, but also possesses extremely important military implications. According to statistics, 70% of the satellites launched by the U.S. and the Soviets have been military satellites. These satellites have been used to conduct military reconnaissance, electronic eavesdropping, communications contact, navigational positioning, weather forecasts and topographical mapping. In the long run, as the satellite military applications become more and more extensive everyday, space is certainly going to be a new battlefield - a sought after "high ground".



In order to recover the satellite and space ship, the "landing capsule" must be returned to the earth; and in order to realize a safe and reliable return the "landing capsule", on the one hand, must have effective heat resistance and deceleration measures, and on the other hand, there must be strict and accurate control from the ground. The return process usually includes stages such as leaving the orbit, reentering into the atmosphere, touchdown, recovery, etc. Our country has completed three satellite returns since 1975 and is the third country in the world, following the Soviets and the U.S., to have mastered this technology.

Diagrams drawn by Li Rueizen and Zhang Bozhe.

[Translator's Note: Chinese characters on the diagram are illegible.]



The instant the guided missile is
launched.

The guided missile troop of the Chinese People's Liberation Army is a developing strategic nuclear retaliatory force. Its duty is - in future wars of anti-aggression using ballistic surface-to-surface strategic guided missiles to attack or destroy strategic targets deep inside enemy territory. The addition of this new branch into our military services has raised the modernization level of our national defense and increased the active defensive forces. This is a blow to the nuclear monopoly and nuclear blackmail of the super powers.

This young guided missile troop has grown strong under the sunshine and rain of the nurturing party. In the mid 50's, Chairman Mao issued the combat directive that we "not only must have more airplanes and guns, but also must have atomic bombs", and thus our first guided missile squadron was born. As the high-tech industry of our national defense developed, a brand new military branch was formally established. The Party Central had given the new military branch clear instructions on its combat goals, educational training, position construction and weapon equipment. Premier Zhou had personally visited the guided missile launching range to review real missiles launch exercises. After the crackdown of the "Gang of Four", Chairman Hua earnestly hoped to "build this new military branch well". Vice Chairman Yeh and Vice Chairman Deng had also gave several important instructions to this branch. Under the care of the Party Central and Central Military Committee, the broad rank and file of the guided missile troop were all with high spirits working hard to learn and master modern military scientific knowledge. Now it has established the preliminary form and become an important combat force in realizing our

country's active defensive strategic duties.

Everyone knows that the guided missile troop collectively demonstrates the results of modern scientific technologies. The troop's weapon equipment is complicated and technologies highly diversified. Proper operation of various aspects need to be guaranteed, and wide range coordination is required making it highly integrated; and its combat actions have great political implications. This requires a highly organized discipline such that every officer and soldier will follow command on every action. They must have the revolutionary spirit of taking ultimate responsibility, the scientific attitude of searching for truth based on fact and the strict style of no nonsense, as well as an overall concept of close coordination and skillfully mastered techniques. During the execution of training and launch duties, they must be carried out in accordance with what Premier Zhou had instructed: that "solemnity and earnesty, completeness and details, stability and reliability induce certain success."

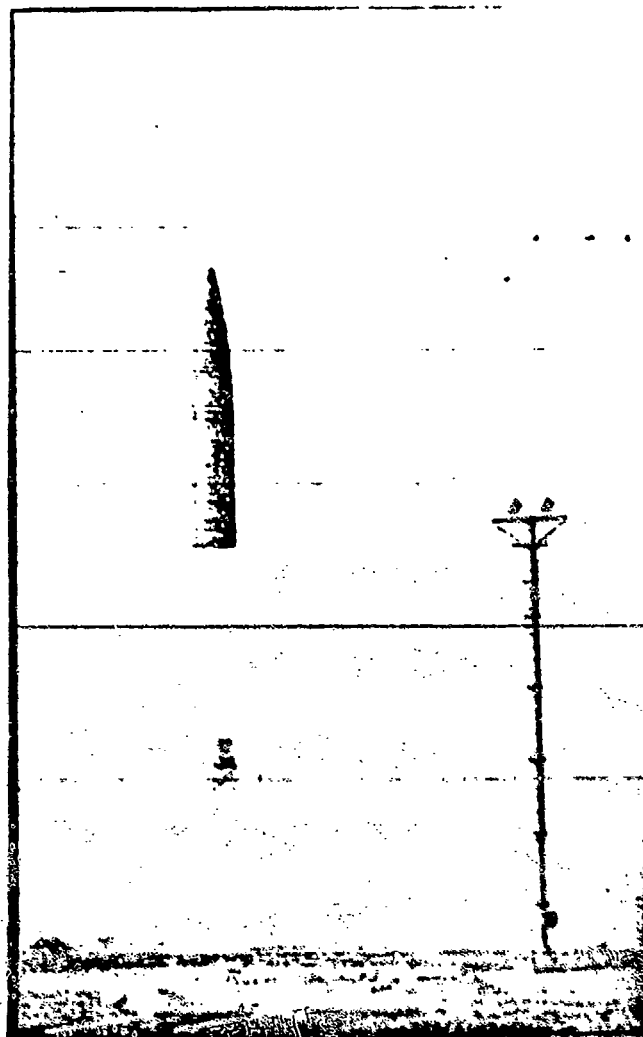
In order to accomplish the combat duty of nuclear retaliation delegated by the Party Central and the people of the motherland, the rank and file of the guided missile troop in recent years has fought against time, struggled to gain momentum in the effort to enhance the modernization construction of the troop. The military academies have trained a large number of technical personnel for the troop. The scientific research units have been actively involved in the research of guided missile nuclear weapon systems for combat use and in the technical renovation of equipment; the troop has greatly enhanced its basic training and assembly training, and training activities that

involve civilians have also been actively conducted. The organizational and command abilities and the tactical techniques level of the rank and file have been continuously increased. In squadrons such as launching, testing, warhead, transporting, computing, surveying, meteorology, communications, tunneling, etc., groups after group of technical experts have been turned out. Not too long ago, a certain battalion carried all its equipment and moved safely and undetectedly for three thousand miles, then following the preset plan, it successfully launched four guided missiles. The acquisition of these results are the precipitation of the guided missile soldiers' loyalty toward the party and the motherland.

Article by Wang Shouren

Photographed by Zhang Juzhen

and Zhang Weidong



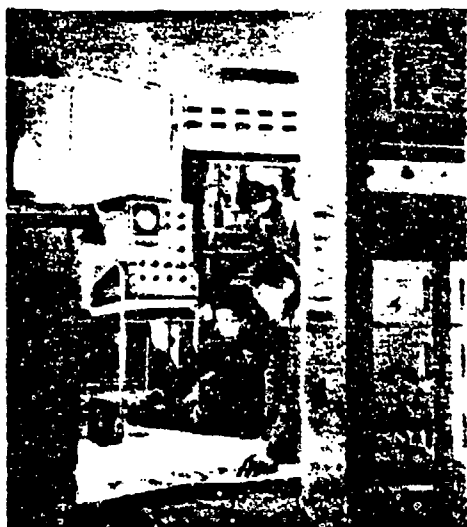
The guided missile flies toward the target following the preset ballistics.



The movie monitor is observing and filming the flight conditions of the payload rocket.



The radar tracks the payload rocket and completes the safety control over the flight of the rocket.



The computer receives, and computes the measurement information provided by various equipment.

When looking at the satellite traveling in the night sky and being fascinated by its golden light of science, one cannot help think of the people who manufactured and launched the satellite. They live in the satellite city deep in the Gobi desert. Their thoughts sparkle like the satellite and circle around the world in search of scientific truth.

They love the satellite testing complex, for here is the "makeup table" before the satellite departs. The testing soldiers hold instruments to conduct tests, assemble beside the satellite and put forth a good wish: may the satellite of our motherland have a healthy "heart", unclogged "veins", agile "nerves" and bright "eyes".

They love the weather radar and air observation balloons. Many a time they activated the radar antenna to look into the distance and sent the balloons into the blue sky one after another. The air observation instrument carried under the balloon embraced the cloud and wind, and reported the weather information high above to find the best

timing for launching the satellite.

The love the satellite observation instrument. It describes the corridor in the sky for the satellite. In the brilliant solar system, the lens covers the entire sky describing the traces of the satellite and photographing the paths the satellite has traveled.

They love the satellite launch site. The silver rocket is propped up by a huge crane. Fuel is added and all pre-launch preparation has been completed, and their sweat is scattered all over the test platform. At this gate to the heavens, dawn, tower, rocket and soldier mix into a colorful painting.

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Look, the veil of fog is dyed red by the rising sun. The silver rocket, which carries the satellite, at the tower bids another goodbye to the good earth of the motherland. The reddish flames, the thundering roars make one love the spirits of those soldiers. They have launched satellites for the people of the motherland, and the people of the motherland pay tribute to them!

Article by Wei Yinshan

Photographed by Liu Dong

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